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10/681,450

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Toshio Hiroe

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OSTROLENK FABER GERB & SOFFEN
1180 AVENUE OF THE AMERICAS
NEW YORK, NY 100368403

EXAMINER

PATEL, RITA RAMESH

ART UNIT

PAPER NUMBER

1746

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/681,450

Applicant(s)

HIROE ET AL.

Examiner

Rita R. Patel

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,7,10-12,14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7,10-12,14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Applicant's Arguments / Amendments

This Office Action is responsive to the amendment filed on 10/27/06. Claims 2-3, 5-6, 8-9, 13, and 15 have been canceled. Claims 1, 4, 7, 10-12, 14, and 16-20 are pending. Claims 1 and 18-20 have been amended. Applicant's arguments have been considered, but are not persuasive. Thus, claims 1, 4, 7, 10-12, 14, and 16-20 are finally rejected for the reasons of record.

Re applicant's arguments re amendment of claim 1 and patentability thereof, applicant has merely cancelled claims 2 and 3 and recited the limitations from these claims in claim 1. Applicant argues that although prior art Inokuchi teaches a posture correction, Inokuchi gives no concrete disclosure regarding the correcting means recited in claim 1. The correcting means recited in the current claim 1 are a recitation of the former limitations of claim 2; claim 2 has been priorly addressed in the Office Action filed on 7/28/06 by the Office. Applicant fails to particularly point out any specific parts of the former rejection that fails to teach all of the former claim 2 limitations, now incorporated in claim 1. Thus, the Office reiterates that the correcting means claims by applicant are taught by Inokuchi's automatic centering means C11; Inokuchi also discloses a part holding member 65 (holding means) and tracking means C12 (positioning means). The Office maintains its rejections over applicant's claims as provided herein.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 7, 10-12, 14, 16-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Inokuchi (US Patent No. 6,259,960 B1).

Inokuchi teaches a parts inspecting system for automated operation by a user; such an apparatus is fully capable of processing a substrate therein. It is well settled that the intended use of a claimed apparatus is not germane to the issue of the patentability of the claimed structure. If the prior art structure is capable of performing the claimed use then it meets the claim. *In re Casey*, 152 USPQ 235, 238 (CCPA 1967); *In re Otto*, 136 USPA 459 (CPA 1963).

As seen in Figure 2A of Inokuchi, parts to be inspected are placed and coordinated on an X-Y movable table, referred to as a holding member 65, inside an inspection chamber 6, thus reading on applicant's claim for a holding means movable between a treating position and a transfer position, as well as a treating tank.

In Figure 11, it can be seen that a rod-driving motor Ma moves rod 11b up and down, and chuck-driving motor Mb spins chuck 12 for operation; motor Ma reads on applicant's claim for a transport means for supporting the substrates and transferring the substrate to and from said holding means in a transfer position; rod 11b reads on applicant's claim for a through hole formed in a cantilever proximal portion of said

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holding means; spin chuck assembly 12 reads on applicant's claim for a support means for supporting said holding means to be rockable about a cantilever point of said holding means. Furthermore, the y-motion table 56 and the x-motion table 63 are moved to bring the inspected part-holding member 65 into a position indicated by the phantom line in Figure 8. This position is referred to by Inokuchi as the transfer position (col. 25, lines 37-41). In addition, motor systems Ma and Mb may read on applicant's claim for advance/retreat drive means for advancing and retreating the support means along a substrate supporting side during a correction process; the motor systems move the part therein for processing accordingly. Finally, spin chuck 12 and motor Mb read on applicant's claim for a drive means including a cam. As seen in Figure 3, the wafer holding mechanisms are of a spherical shape, thus reading on applicant's limitation wherein support means include a spherical seat.

In Figure 14, a method of determining coordinate-conversion parameters is illustratively shown; it is assumed that the x- and y-coordinates of an inspected part on the preliminary inspection equipment 1, 2 are known. The position of this inspected part is detected in two or more detection position P_1 , P_2 , etc. The X- and Y-coordinates of these detection positions are detected. Let (X_0, Y_0) be the origin of the xy-coordinate system. A first straight line segment is drawn from the origin of the XY-coordinate system to the origin (X_0, Y_0) of the xy-coordinate system. A second straight line segment is drawn from the position given by the X- and Y-coordinates to the position given by the x- and y-coordinates. The angle Θ made between these first and second line segments is calculated from the known x- and y-coordinates and from the detected

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X- and Y-coordinates (col. 31-32). Additionally, a commonly used function-realizing means C1 has means C11-15 which may be activated in automating said apparatus; functions performed include automatic misalignment correcting means, which is operated in accordance with a program (col. 32, line 23-34). Automatic centering means C11 (Figures 16 and 65) function to move a specified defect position into the inspection position (col. 32, lines 35-46). Thus reading on applicant's claim for a detecting means for detecting a posture variation of said holding means and correcting means for correcting a position of one or said holding means and said transport means.

Inokuchi teaches a tilted image tracking means C12 (Figures 17, 18, and 69) for detecting and observing images of a part held within the member 65 (col. 33, lines 27-63); this reads on applicant's claims for a image processing means for performing a detection of a substrate therein. As seen in Figures 17a-c, the detecting means of said apparatus is arguably in a proximal portion of said holding means. Focusing lens F3 and objective lens F8 are adjusted so that the defect point is brought into the scanning center; thus reading on applicant's claims for detecting means for detecting a distortion. Also, image photography means C15 may be used for storing a photograph of a defect image within the server 3. Lenses F3, F8 and photography means C15 remain in contact with part holding member 65 for achieving detecting means; thus also reading on claims made by applicant for contact type detecting means for performing a detection while in contact with said holding means.

Inokuchi discloses automatic wafer load/unload means C21 (Steps 114, 127, and 147), wherein the automatic wafer load/unload means C21 causes the cassette

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identification number reader 16 to read the bar code printed on the label stuck on the cassette 13, sends the read cassette identification number to the DIFS server 3, and fetches information about defects on the wafer in the cassette 13 from the DIFS database. Then, the automatic wafer load/unload means C21 executes the following processing steps successively: when the wafer cassette 13 is placed in position, the load/unload means C21 instructs the bar code reader to read the device number and the lot number. The load/unload means C21 searches the database for the device number and lot number and fetches information about defects on the wafer W in the cassette 13. After the wafer has been loaded, i.e., placed in the inspection position, defect information involved with the wafer is determined. In loading the wafer, an orientation flat state or notches are detected by an aligner. Adjustments are made so that they are in a given direction and that the origin of the wafer agrees with the origin of the system with a certain degree of accuracy (col. 61-62). Thus reading on applicant's claims for correcting means that may be performed while the holding device is unloaded with substrates, as well as, between an unloaded and substrate holding state. When the device is unloaded, Inokuchi teaches a bar code identification process that incurs and so in between loaded and unloaded positions, a correction may successively take place as the apparatus fetches information about the wafer W to be processed therein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inokuchi as applied to claims above, and further in view of Okumura (US Patent No. 6,198,201).

Inokuchi teaches the claimed invention, except in its disclosure of a driving means Inokuchi claims a motor and fails to further state if a piezoelectric element is used therein. Okumura, however, teaches a substrate processing apparatus whereby piezoelectric elements 3 serve as electromechanical energy conversion elements for driving the apparatus wherein substrates 7 are disposed adjacent thereto. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a piezoelectric element in driving the apparatus of Inokuchi, as taught by Okumura in achieving vibrational driving means for better processing substrates therein; it is commonly known in the art of processing substrates that driving means including piezoelectric elements may provide practical use in applying wave type vibration energy for efficient processing while the set-up of Okumura aids in preventing the propagation of vibration to the fixed portion (col. 1, lines 53-64; col. 2, line 9; col. 3, lines 6-10).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 8-5.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



RRP



MICHAEL BARR
SUPERVISORY PATENT EXAMINER